

In accordance with 37 CFR 121 (c):

(1) A clean version of the entire set of pending claims is set out below. In this version,

5 (i) the amended claims are without markings to indicate the changes made,  
(ii) in each claim, a parenthetical expression follows the claim number indicating the status of the claim as amended, unchanged or new.

10 (2) Attached hereto is a separate paper entitled  
"Version of Amended Claims with Markings to show Changes  
requested by the accompanying Reply, filed in accordance with 37  
CFR 1.121(c)(1)(ii)".

15 That separate paper sets out each of the rewritten claims (but not the canceled claims or the new claims), marked up to show all the changes relative to the previous version of the claim. In that separate paper,

20 (i) a parenthetical expression (which is the same as the parenthetical expression in the clean version of claims set out below) follows the claim number and indicates the status of the claim as amended, and  
(ii) the changes are shown by brackets (for deleted matter) and underlining (for added matter).

1. (Unchanged) A thickened oil composition which comprises  
(1) an oil, and  
(2) uniformly dispersed in the oil as a crystallized solid, a side chain  
5 crystalline (SCC) polymer which  
(a) is substantially free of fluorine atoms, carboxylic acid groups, carboxylic acid salt groups, sulfonic acid groups, sulfonic acid salt groups, amido groups, pyrrolidino groups and imidazole groups; and  
(b) is present in amount such that it thickens the oil.

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2. (Unchanged) A composition according to Claim 1, which is at a temperature  $T_s$ , where  $T_s$  is from 15 to 25 °C, and wherein the SCC polymer has a crystalline melting point,  $T_p$ , which is 10 to 30 °C above  $T_s$ .

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3. (Unchanged) A composition according to Claim 2 wherein  $T_p$  is 40 to 50 °C.

4. (Unchanged) A composition according to Claim 2 wherein  $T_p$  is 43 to 48 °C.

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5. (Unchanged) A composition according to Claim 3 wherein the SCC polymer has a heat of fusion of at least 20 J/g, and an onset-of-melting point  $T_o$  such that  $T_p-T_o$  is less than 10 °C.

6. (Unchanged) A thickened oil composition which comprises  
25 (1) an oil, and  
(2) uniformly dispersed in the oil as a crystallized solid, a side chain crystalline (SCC) polymer which  
(a) is substantially free of fluorine atoms, carboxylic acid groups, carboxylic acid salt groups, sulfonic acid groups, sulfonic acid salt groups, amido groups, pyrrolidino groups and imidazole groups; and  
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(b) contains 10-30% by weight of repeating units containing hydroxyl groups.

7. (Unchanged) A thickened oil composition which comprises

5 (1) an oil, and

(2) uniformly dispersed in the oil as a crystallized solid, a side chain crystalline (SCC) polymer which

10 (a) has a crystalline melting point,  $T_p$ , of 40-50 °C.;

(b) consists essentially of

(i) 70-99% by weight of repeating units derived from at least one n-alkyl acrylate or methacrylate ester in which the n-alkyl group contains 16 to 22 carbon atoms,

(ii) 1-30% by weight of repeating units derived from at least one acrylate or methacrylate ester in which the ester group contains a hydroxyl-substituted alkyl group containing less than 12 carbon atoms, and

15 (iii) 0-30% by weight of repeating units derived from at least one acrylate or methacrylate ester in which the ester group contains an unsubstituted alkyl group containing less than 16 carbon atoms.

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Claim 8 has been canceled.

9. (Unchanged) A thickened oil composition which comprises

25 (1) an oil, and

(2) dispersed in the oil, a polymer which

(a) has a crystalline melting point,  $T_p$ , and an onset of melting temperature,  $T_o$ , such that  $T_p-T_o$  is less than  $T_p^{0.7}$ ;

(b) is soluble in the oil at temperatures above  $T_p$ ,

(c) has been dispersed in the oil by a process which comprises

5 (i) dissolving the polymer in the oil at a temperature above  $T_p$ , and

(ii) cooling the solution to crystallize the polymer in the oil,

(d) is a side chain crystalline (SCC) polymer which is substantially free of fluorine atoms, carboxylic acid groups, carboxylic acid salt groups, sulfonic acid groups, sulfonic acid salt groups, amido groups, pyrrolidino groups and imidazole groups; and

10 (e) is present in amount such that it thickens the oil;

the composition being at a temperature  $T_s$  which is below  $T_p$ .

10. (Unchanged) A composition according to Claim 9 wherein  $T_s$  is from 15 to 25 °C  
15 and  $T_p$  is 10 to 30 °C above  $T_s$ .

11. (Unchanged) A composition according to Claim 9 wherein  $T_p$  is 40 to 50 °C.

12. (Unchanged) A composition according to Claim 9 wherein the SCC polymer has  
20 a heat of fusion of the least 20 J/g, and an onset-of-melting point  $T_o$  such that  $T_p-T_o$  is less than 10 °C.

13. (Unchanged) A thickened oil composition which comprises

25 (1) an oil, and

(2) uniformly dispersed in the oil as a crystallized solid, an SCC polymer  
which

(a) consists essentially of

(i) 70-99% by weight of repeating units derived from at least  
30 one n-alkyl acrylate or methacrylate ester in which the n-alkyl group  
contains 16 to 22 carbon atoms,

(ii) 1-30% by weight of repeating units derived from at least one acrylate or methacrylate ester in which the ester group contains a hydroxyl-substituted alkyl group containing less than 12 carbon atoms, and

5 (iii) 0-29% by weight of repeating units derived from at least one acrylate or methacrylate ester in which the ester group contains an unsubstituted alkyl group containing less than 16 carbon atoms; and

10 (b) is substantially free of fluorine atoms, carboxylic acid groups, carboxylic acid salt groups, sulfonic acid groups, sulfonic acid salt groups, amido groups, pyrrolidino groups and imidazole groups.

14. (Unchanged) A composition according to Claim 13 wherein the SCC polymer contains 10-30% by weight of the repeating units derived from at least one acrylate or 15 methacrylate ester in which the ester group contains a hydroxyl-substituted alkyl group containing less than 12 carbon atoms.

15. (Unchanged) A thickened oil composition which is at a temperature  $T_s$  of 15 to 25 °C, and which comprises

20 (1) an oil, and

(2) a side chain crystalline (SCC) polymer which

(a) is uniformly dispersed in the oil as a crystallized solid

(b) has a crystalline melting point,  $T_p$ , of 43 to 48 °C, and

(c) consists essentially of

25 (i) 70-99% by weight of repeating units derived from at least one n-alkyl acrylate or methacrylate ester in which the n-alkyl group contains 16 to 22 carbon atoms,

(ii) 1-30% by weight of repeating units derived from at least one acrylate or methacrylate ester in which the ester group contains a hydroxyl-substituted alkyl group containing less than 12 carbon atoms, and

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(iii) 0-29% by weight of repeating units derived from at least one acrylate or methacrylate ester in which the ester group contains an unsubstituted alkyl group containing less than 16 carbon atoms.

5 16. (Unchanged) A composition according to Claim 15 wherein the SCC polymer contains 15-25 percent by weight of the repeating units derived from at least one acrylate or methacrylate ester in which the ester group contains a hydroxyl-substituted alkyl group.

10 17. (Unchanged) A composition according to Claim 15 wherein the SCC polymer consists essentially of

(i) 70-99% by weight of the repeating units derived from at least one n-alkyl acrylate or methacrylate ester in which the n-alkyl group contains 16 to 22 carbon atoms, and

15 (ii) 1-30% by weight of the repeating units derived from at least one acrylate or methacrylate ester in which the ester group contains a hydroxyethyl, hydroxypropyl, or hydroxybutyl group.

18. (Unchanged) A composition according to Claim 17 wherein the SCC polymer

20 contains 15-25 percent by weight of the repeating units derived from at least one acrylate or methacrylate ester in which the ester group contains a hydroxyl-substituted alkyl group.

25 19. (Unchanged) A composition according to Claim 15 which contains less than 1% by weight of surface active agents, based on weight of the oil.

20. (Unchanged) A method of making a thickened oil composition comprising an oil and, dispersed in the oil, a side chain crystalline (SCC) polymer which

(a) has a crystalline melting point,  $T_p$ , and an onset of melting temperature,  $T_o$ , such that  $T_p - T_o$  is less than  $T_p^{0.7}$ , and

(b) is substantially free of fluorine atoms, carboxylic acid groups, carboxylic acid salt groups, sulfonic acid groups, sulfonic acid salt groups, amido groups, pyrrolidino groups and imidazole groups;

the method comprising

5 (i) dissolving the SCC polymer in the oil at a temperature above  $T_p$ , and  
(ii) cooling the solution to crystallize the polymer in the oil;

the amount of the SCC polymer being such that, after step (ii), it thickens the oil.

21. (Unchanged) A thickened oil composition which is free of water and which

10 comprises

(1) an oil, and  
(2) uniformly dispersed in the oil as a crystallized solid, at least 2% by weight, based on the weight of the oil, of a side chain crystalline (SCC) polymer which is substantially free of fluorine atoms, carboxylic acid

15 groups, carboxylic acid salt groups, sulfonic acid groups, sulfonic acid salt groups, amido groups, pyrrolidino groups and imidazole groups.

22. (Unchanged) A composition according to Claim 21, which is at a temperature  $T_s$ , where  $T_s$  is from 15 to 25 °C, and wherein the SCC polymer has a crystalline melting

20 point,  $T_p$ , which is 10 to 30 °C above  $T_s$ .

23. (Unchanged) A composition according to Claim 22 wherein  $T_p$  is 40 to 50 °C.

24. (Unchanged) A composition according to Claim 22 wherein  $T_p$  is 43 to 48 °C.

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25. (Unchanged) A composition according to Claim 23 wherein the SCC polymer has a heat of fusion of at least 20 J/g, and an onset-of-melting point  $T_o$  such that  $T_p-T_o$  is less than 10 °C.

30 26. (Unchanged) A composition which is a water-in-oil emulsion or an oil-in-water emulsion and which comprises

(1) water,  
(2) an oil, and  
(3) uniformly dispersed in the oil as a crystallized solid, a side chain  
5 crystalline (SCC) polymer which is substantially free of fluorine atoms,  
carboxylic acid groups, carboxylic acid salt groups, sulfonic acid groups,  
sulfonic acid salt groups, amido groups, pyrrolidino groups and imidazole  
groups.

27. (Unchanged) A composition according to Claim 26, which is at a temperature  $T_s$ ,  
10 where  $T_s$  is from 15 to 25 °C, and wherein the SCC polymer has a crystalline melting  
point,  $T_p$ , which is 10 to 30 °C above  $T_s$ .

28. (Unchanged) A composition according to Claim 26 wherein  $T_p$  is 40 to 50 °C.

15 29. (Unchanged) A composition according to Claim 26 which is an oil-in-water  
emulsion and which contains less than 1% by weight of surface active agents, based on  
the weight of the oil.

30. (Unchanged) A thickened oil composition according to Claim 26 wherein the SCC  
20 polymer has a heat of fusion of at least 20 J/g, and an onset-of-melting point  $T_o$  such  
that  $T_p-T_o$  is less than 10 °C.

31. (Unchanged) A composition according to Claim 26 which contains at least 0.5%  
by weight of the SCC polymer, based on the weight of the composition.

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30 32. (Amended) A thickened oil composition which comprises  
(1) an oil selected from selected from the group consisting of mineral oils;  
vaseline oils; hydrogenated polyisobutylene; triglycerides; purcellin oil; isopropyl  
myristate; butyl myristate; cetyl myristate; isopropyl palmitate; butyl palmitate;  
ethyl-2-hexyl palmitate; isopropyl stearate; butyl stearate; octyl hexadecyl  
stearate; isocetyl stearate; decyl oleate; hexyl laurate; propylene glycol

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dicaprylate, diisopropyl adipate; animal oils; silicone oils; oleyl alcohol; linoleyl alcohol; linolenyl alcohol; isostearyl alcohol; octyl dodecanol; esters derived from lanolic acid; and acetyl glycerides; and

(2) uniformly dispersed in the oil as a crystallized solid, a side chain crystalline (SCC) polymer which is substantially free of fluorine atoms, carboxylic acid groups, carboxylic acid salt groups, sulfonic acid groups, sulfonic acid salt groups, amido groups, pyrrolidino groups and imidazole groups.

33. (Unchanged) A composition according to Claim 32, which is at a temperature  $T_s$ ,  
10 where  $T_s$  is from 15 to 25 °C, and wherein the SCC polymer has a crystalline melting point,  $T_p$ , which is 10 to 30 °C above  $T_s$ .

34. (Unchanged) A composition according to Claim 32 wherein  $T_p$  is 40 to 50 °C.

15 35. (Unchanged) A composition according to Claim 32 wherein  $T_p$  is 43 to 48 °C.

36. (Unchanged) A composition according to Claim 32 wherein the SCC polymer has a heat of fusion of at least 20 J/g, and an onset-of-melting point  $T_o$  such that  $T_p-T_o$  is less than 10 °C.

20 37. (Unchanged) A composition according to Claim 1 wherein each of the following conditions is fulfilled by the SCC polymer:

- (1) at most 1% of the carbon atoms are substituted by one or more fluorine atoms;
- (2) at most 0.2 mol% of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (3) at most 0.5% by weight of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (4) the polymer has an acidity of less than 0.07 meq/g;
- (5) at most 1 mol% of the repeating units are derived from acrylamide
- (6) at most 0.2 mol% of the repeating units are derived from

N-vinylpyrrolidone;

(7) at most 0.2 mol% of the repeating units are derived from N-vinylimidazole.

38. (Unchanged) A composition according to Claim 1 wherein each of the following  
5 conditions is fulfilled by the SCC polymer:

- (1) none of the carbon atoms are substituted by one or more fluorine atoms;
- (2) none of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (3) none of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- 10 (4) the polymer has an acidity of less than 0.07 meq/g;
- (5) none of the repeating units are derived from acrylamide;
- (6) none of the repeating units are derived from N-vinylpyrrolidone;
- (7) none of the repeating units are derived from N-vinylimidazole.

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39. (Unchanged) A composition according to Claim 21 wherein each of the following  
conditions is fulfilled by the SCC polymer:

- (1) at most 1% of the carbon atoms are substituted by one or more fluorine atoms;
- (2) at most 0.2 mol% of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (3) at most 0.5% by weight of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (4) the polymer has an acidity of less than 0.07 meq/g;
- 20 (5) at most 1 mol% of the repeating units are derived from acrylamide
- (7) at most 0.2 mol% of the repeating units are derived from N-vinylpyrrolidone;
- (7) at most 0.2 mol% of the repeating units are derived from N-vinylimidazole.

30 40. (Unchanged) A composition according to Claim 21 wherein each of the following  
conditions is fulfilled by the SCC polymer:

- (1) none of the carbon atoms are substituted by one or more fluorine atoms;
- (2) none of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (3) none of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (4) the polymer has an acidity of less than 0.07 meq/g;
- (5) none of the repeating units are derived from acrylamide;
- (6) none of the repeating units are derived from N-vinylpyrrolidone;
- (7) none of the repeating units are derived from N-vinylimidazole.

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41. (Unchanged) A composition according to Claim 26 wherein each of the following conditions is fulfilled by the SCC polymer:

- (1) at most 1% of the carbon atoms are substituted by one or more fluorine atoms;
- (2) at most 0.2 mol% of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (3) at most 0.5% by weight of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (4) the polymer has an acidity of less than 0.07 meq/g;
- (5) at most 1 mol% of the repeating units are derived from acrylamide
- (8) at most 0.2 mol% of the repeating units are derived from N-vinylpyrrolidone;
- (7) at most 0.2 mol% of the repeating units are derived from N-vinylimidazole.

25 42. (Unchanged) A composition according to Claim 26 wherein each of the following  
conditions is fulfilled by the SCC polymer:

(1) none of the carbon atoms are substituted by one or more fluorine atoms;

(2) none of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;

30 (3) none of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;

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- (4) the polymer has an acidity of less than 0.07 meq/g;
- (5) none of the repeating units are derived from acrylamide;
- (6) none of the repeating units are derived from N-vinylpyrrolidone;
- (7) none of the repeating units are derived from N-vinylimidazole.

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43. (Unchanged) A composition according to Claim 32 wherein each of the following conditions is fulfilled by the SCC polymer:

- (1) at most 1% of the carbon atoms are substituted by one or more fluorine atoms;
- (2) at most 0.2 mol% of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (3) at most 0.5% by weight of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (4) the polymer has an acidity of less than 0.07 meq/g;

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- (5) at most 1 mol% of the repeating units are derived from acrylamide
- (9) at most 0.2 mol% of the repeating units are derived from N-vinylpyrrolidone;
- (7) at most 0.2 mol% of the repeating units are derived from N-vinylimidazole.

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44. (Unchanged) A composition according to Claim 32 wherein each of the following conditions is fulfilled by the SCC polymer:

- (1) none of the carbon atoms are substituted by one or more fluorine atoms;
- (2) none of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;

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- (3) none of the repeating units contain a carboxyl group, a carboxyl salt group, a sulfonic acid group, or a sulfonic acid salt group;
- (4) the polymer has an acidity of less than 0.07 meq/g;
- (5) none of the repeating units are derived from acrylamide;
- (6) none of the repeating units are derived from N-vinylpyrrolidone;

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- (7) none of the repeating units are derived from N-vinylimidazole.

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Subj 62  
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45. (Amended) A thickened oil composition which comprises  
(1) an oil, and  
(2) uniformly dispersed in the oil as a crystallized solid, a side chain  
crystalline (SCC) polymer which consists essentially of  
5 (i) 70-99% by weight of repeating units derived from at least  
one n-alkyl acrylate or methacrylate ester in which the n-alkyl group  
contains 16 to 50 carbon atoms,  
(ii) 1-30% by weight of repeating units derived from  
hydroxyethyl acrylate, and  
10 (iii) 0-29% by weight of repeating units derived from at least one  
acrylate or methacrylate ester in which the ester group contains an  
unsubstituted alkyl group containing less than 16 carbon atoms.

46. (Unchanged) A composition according to Claim 45 wherein the SCC polymer  
15 contains 15-25% by weight of the repeating units derived from hydroxyethyl acrylate.

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Subj 62  
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47. (New) A thickened oil composition which is free of water and which comprises  
(1) an oil, and  
(2) uniformly dispersed in the oil as a crystallized solid, 2 to 10% by  
weight, based on the weight of the oil, of a side chain crystalline (SCC)  
polymer which is substantially free of fluorine atoms, carboxylic acid  
groups, carboxylic acid salt groups, sulfonic acid groups, sulfonic acid salt  
groups, amido groups, pyrrolidino groups and imidazole groups.

25 48. (New) A composition according to Claim 47, which is at a temperature  $T_s$ , where  
 $T_s$  is from 15 to 25 °C, and wherein the SCC polymer has a crystalline melting point,  $T_p$ ,  
which is 10 to 30 °C above  $T_s$ .

49. (New) A composition according to Claim 48 wherein  $T_p$  is 40 to 50 °C.  
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50. (New) A composition according to Claim 49 wherein  $T_p$  is 43 to 48 °C.

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51. (New) A composition according to Claim 49 wherein the SCC polymer has a heat of fusion of at least 20 J/g, and an onset-of-melting point  $T_o$  such that  $T_p - T_o$  is less than 10 °C.

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